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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/425,694	10/22/1999	ROLAND BRUNNER	BRUNNER-ET-A	9906

7590 01/07/2005

COLLARD & ROE PC
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ROSLYN, NY 11576

EXAMINER

SONG, MATTHEW J

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 01/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/425,694

Applicant(s)

BRUNNER ET AL.

Examiner

Matthew J Song

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 20 December 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see continuation sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: _____

Claim(s) withdrawn from consideration: _____

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☐ Other: _____

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER

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Response to Arguments

Continuation of Item 5:

Applicant's arguments filed 12/20/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references (pg 7), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Verhaverbeke teaches a rinse fluid of very dilute aqueous solution of hydrochloric acid to prevent metallic deposition on the surface of electronic component precursors (col 5, ln 5-10). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Pirooz with Verhaverbeke to prevent metallic deposition, as taught by Verhaverbeke. Furthermore, substitution of known equivalents for the same purpose is held to be obvious (MPEP 2144.06).

Applicants' argument that Verhaverbeke does not suggest modifying Pirooz by using a solution of HCl because this step would act in opposition to a higher output and an increased savings is noted but is not found persuasive. Pirooz teaches treating wafers in a solution of HF, rinsing in DI water, treating the rinsed wafers in ozone and rinsing the treated wafers in DI water (col 2, ln 48-60 and col 3, ln 1-67). Verhaverbeke teaches a process allowing the elimination of rinse steps between treatments to improve throughput (col 4, ln 10-25). Verhaverbeke also

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teaches certain baths may contain a rinse fluid but it is required that at least two of the baths in a sequence contain a reactive chemical process fluid (col 7, ln 50-67). Therefore, the elimination of the rinse between the HF and ozone treatments is required by Verhaverbeke to obtain the advantages taught by Verhaverbeke and a rinse following the ozone treatment would also be allowable according to Verhaverbeke because Verhaverbeke teaches certain baths may contain a rinse fluid. Furthermore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify to rinse the wafer as a final step to remove chemical prior to further processing.

Applicants' argument that any further processing of the surface of the silicon wafer taught by Pirooz would destroy the properties of the surface is noted but is not found persuasive. This argument is viewed as mere attorney argument, which lacks evidence; therefore is not found persuasive. Applicant has not provided any evidence that processing the surface of the wafer is a very dilute HCl solution would destroy the properties of the wafer. Furthermore, US 5,932,022 teaches HCl is used to grow hydrophilic oxide surfaces.

In response to applicant's argument that there is no suggestion to combine the references (pg 9), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Verhaverbeke teaches the elimination of a DI rinsing step between reactive chemical processing steps to reduce costs and improve output (col 4, ln 1-25) and Verhaverbeke

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teaches using a very dilute HCl solution as a rinse to prevent metal contamination (col 5, ln 1-15).

Applicants' arguments against Berman and Davison are noted but are not found persuasive. Applicants' allege that combining Berman or Davison with Pirooz would produce undesirable results. However, applicants' arguments are based on data provided in the specification, which provide no relevant information to re-circulation/filtration of processing fluid contained in a bath. This argument is viewed as mere attorney argument, which lacks evidence; therefore is not found persuasive. Applicant has not provided any evidence that re-circulation/filtration produces defects.